

CHRONOLOGY OF SIGNIFICANT EVENTS IN OPERATOR LICENSING
SINCE THREE MILE ISLAND (TMI - 1979)

Date	Event
4/79	Accident at TMI-2
3/80	Harold Denton letter immediately upgrades training and qualifications for reactor operators (ROs) and senior reactor operators (SROs) (e.g., experience, three months on shift), scope of NRC licensing examinations (e.g., new written categories on heat transfer and fluid flow (HTFF) and thermodynamics, passing grade raised to 80% overall), and requalification programs (e.g., include HTFF, thermodynamics, and mitigating core damage; raise passing grade to 80%; control manipulations).
11/80	NUREG-0737 incorporated the Denton letter requirements. Pending accreditation of training institutions, licensees will certify (at the SRO level) instructors who teach systems, integrated response, transient and simulator courses and enroll them in requalification programs. The scope of the licensing examinations after 9/81 will include simulator exams.
12/82	Section 306 of the Nuclear Waste Policy Act (NYPA) directs the NRC to promulgate regulations or other appropriate guidance for the training and qualifications of nuclear power plant operators (and other personnel) and to establish simulator training requirements for applicants for operator licenses and for operator requalification programs, requirements governing NRC administration of requalification examinations, requirements for operating tests at civilian nuclear power plant simulators, and instructional requirements for licensee personnel training programs.
12/82	Regions II and III assumed responsibility and authority for the issuance of operators' licenses.
7/83	Region I assumed responsibility and authority for the issuance of operators' licenses.
10/83	Regions IV and V assumed responsibility and authority for the issuance of operators' licenses.
2/84	SECY-84-76 forwards proposed rulemaking (and four Regulatory Guides: 1.8, 1.149, 1.134, and a new guide on the application of the systems approach to qualifications and training at nuclear power plants) for operator licensing and training and qualification of civilian nuclear power plant personnel to the Commission for approval. Action on the rulemaking was postponed at the Nuclear Management and Resources Council's (NUMARC's) request until the industry could develop and present an alternative training and qualifications position based on industry and Institute of Nuclear Power Operations (INPO) initiatives. NUMARC endorsed the aspects of SECY-84-76 related to operator licensing (i.e., Part 55, RG 1.149 and 1.134 and parts of 1.8).

6/84	SECY-84-76A provided the Commission with an alternative to the training and qualifications-related portions of SECY-84-76 in response to the NUMARC proposal.
9/84	SECY-84-76B provided the Commission with additional alternatives to the training rule in 84-76A.
10/84	The Commission directed the staff to write a policy statement which authorizes the industry (INPO and NUMARC) to go forward for 2 years with its initiatives on training and accreditation programs (and fitness-for-duty (FFD)). It also directed the staff to publish proposed changes to Part 55 as contained in SECY-84-76A and to make appropriate changes in RG 1.8; no changes were required in RGs 1.149 or 1.134.
2/85	The Commission approved the policy statement on training and qualification of nuclear power plant personnel that was proposed in SECY-85-001.
4/86	SECY-86-123 requested Commission approval to publish the final rulemaking for operator licensing and two associated RGs.
9/86	NUREG-1021, Revision 3, is issued.
10/86	The Commission gave tentative approval to the final rule on operator licensing subject to 9 modifications attached and directed the staff to return the package for final approval and affirmation. The Commission also informed the staff that it was considering the addition of a requirement to pass an NRC-administered requalification examination prior to license renewal.
11/86	SECY-86-348 forwarded the final rulemaking, with the changes directed by the staff requirements memorandum (SRM), back to the Commission for affirmation.
1/87	The Executive Director for Operations (EDO) proposed three options for Commission consideration regarding the earlier proposal to require an NRC administered exam prior to license renewal.
2/87	The Commission approved publication of the final rule and three associated RGs. The Commission also approved a modified version of EDO Option A to require the NRC to examine all licensed operators on a random basis so that no operator will go longer than 6 years between NRC exams once the initial license is issued.

5/87	<p>The amendment that made Part 55 conform with Section 306 of the NWPB became effective. Major changes included:</p> <ul style="list-style-type: none"> - NRC review and approval of requalification programs. - Passing an NRC requalification examination as a condition for license renewal. - Extension of the license term from 2 to 6 years. - The requirement for operating tests to be administered on a certified or approved simulation facility. The scope of the operating test was expanded to include team skills. - A simplified application process for applicants who have completed a Commission-approved (i.e., INPO accredited), SAT-based training program that uses a certified or approved simulation facility. - A simplified medical certification process for all but conditional license applications. - The addition of proficiency watches as a license condition. - The elimination of the SRO instructor certification. <p>NUREG-1021, Revision 4, was issued. The comprehensive requalification written exams were essentially 60% of an initial licensing examination and the operating tests were also similar in scope and format to the initial version. The NRC would randomly select about 20% of the operators each year to receive written, walk-through and simulator examinations.</p>
9/87	<p>The staff held a public meeting with industry representatives at NUMARC's request to discuss concerns related to the conduct of NRC requalification examinations. First, the stress on individual operators was heightened because their licenses were now at risk, and, second, the facilities had to provide impromptu training to the operators selected for the NRC exam because it did not reflect all of the industry's training objectives (the examinations had an over- emphasis on theory and memorization and were not operationally oriented). Highly experienced operators were resigning or transferring rather than take the required NRC exams. Because of the potential impact on plant safety, the staff suspended all NRC requalification examinations until it could evaluate the concerns and change the program.</p>
12/87	<p>The first requalification exam using the revised approach developed by an Office of Nuclear Reactor Regulation (NRR)/regional task force was conducted at H.B. Robinson. The NRC examinations incorporated simulator individual simulator critical tasks (ISCTs), job performance measures (JPMs) and a static written examination for the first time. Additional pilot examinations were conducted in each of the other regions through July 1988 in an effort to refine the process for evaluating operator performance for license renewal and the facility licensees' requalification programs. The staff worked closely with NUMARC during the development process and participated in industry workshops during the summer of 1988.</p>
5/88	<p>The Commission requested an option paper on alternatives to further improve the NRC's requalification examination program and a status briefing after the pilot examinations were complete.</p>
6/88	<p>The Chairman requested quarterly status reports on the new requalification program.</p>
9/88	<p>The staff administered the first pilot generic fundamentals examination (GFE) to volunteers at boiling water reactors. A second pilot exam was administered to operators at boiling water reactors (BWRs) and pressurized water reactors (PWRs) in June 1989.</p>

10/88	<p>The staff briefed the Commission on the results of the pilot requalification examinations and lessons learned. Concerns arise regarding the resources necessary to implement the program.</p> <p>NUREG-1021, Revision 5, was issued and became effective on 1/1/89. The revised NRC requalification examination program was implemented on a full-scale basis. 80% of the examination is from the facility sample plan. The NRC has the latitude to develop up to 20% of test items from outside the sample plan. To pass the examinations, an individual must:</p> <ul style="list-style-type: none"> - correctly perform all ISCTs on the simulator exam. - pass 8 of 10 JPMs and 70% of JPM questions. - score 80% on both static and open reference written exams.
12/88	Proposed rule is published requiring SROs to hold a bachelor's degree in engineering.
2/89	SECY-89-55 discusses four alternatives (A, stick with the pilot process; B, use a modified, 2-on-1 walk-through; C, allow INPO to conduct the exams with NRC oversight; D, use an independent agency to conduct the exams with NRC oversight) for the conduct of NRC requalification examinations.
3/89	The Commission directed the staff to prepare a Notice of Proposed Rulemaking to amend Part 55 to make FFD a condition of the operator's license and Part 2 to incorporate appropriate enforcement sanctions.
5/89	The Commission approves Alternative B (2-on-1 walk-through exams; each operator performs 5 JPMs and responds to questions on 5 others) as a method of reducing the resource requirements for conducting requalification examinations at facilities that were previously evaluated as satisfactory by the NRC.
8/89	Proposed SRO degree rule is withdrawn and policy statement on education of senior operators and shift supervisors is published.
10/89	The GFE program was formally implemented by Generic Letter 89-17.
3/90	The Commission approved the proposed FFD amendment to Parts 2 and 55 for publication.
5/90	The Office of the Inspector General (OIG) issued its final report on an operator licensing program review. OIG had two major concerns involving the use of contract examiners to perform an inherent governmental function and the appearance that the staff was using personal services contracts to avoid personnel ceilings.
6/90	NUREG-1021, Revision 6, was published for implementation on 10/1/91. It incorporated the JPM methodology in the initial examination program and required prescribing and approval of the operating test to address OIG contractor concerns. Alternative "B" was implemented for satisfactory facilities' second round of NRC requalification examinations.
10/90	Nonpower reactor operator licensing program recentralized at the NRR Operator Licensing Branch (HOLB).
2/91	SECY-91-34 proposed that the NRC pilot test a revised requalification simulator test grading method that would encourage teamwork, communications, and command and control. The revised method would eliminate the use of ISCTs as individual grading criteria and focus on crew performance.

2/91	In response to an OIG recommendation, the EDO petitioned the Comptroller General of the United States for a decision as to whether the NRC's contracts for operator licensing were permissible under federal contract regulations (i.e., Were contractors performing an inherent governmental function and were they personal services contracts?)
3/91	The Commission directed the staff to continue providing semi-annual reports on the status of the requalification program until the staff is satisfied with the stability of the program.
6/91	The Commission approved the final rulemaking to amend Parts 2 and 55 requiring operators to comply with FFD programs as a license condition. The rule became effective on 8/14/91.
7/91	The first pilot crew-based requalification examination was conducted at Oconee. Five additional examinations were conducted through December 1991.
8/91	The Comptroller General concluded: (1) that the Commission's examination guidelines (per NUREG-1021, Revision 6) were so comprehensive and detailed that the contract employees exercise minimal discretionary authority and make limited value judgements in preparing recommendations for Commission employees who decide whether to grant operator licenses, and (2) that the use of contractors did not involve the improper use of personal services contracts because the contract employees are not subject to continuous supervision and control by employees of the Commission.
11/91	The Commission, in response to concerns regarding examination consistency, directed the staff to study the advantages and disadvantages of recentralizing the operator licensing function.
12/91	The Human Factors Branch completed its study of requalification examination stress and reported the results to the Commission in SECY-91-391. It identified the frequency of changes in the requalification examination program, inconsistencies among examiners in interpreting the Examiner Standards, and the ISCT grading methodology as the major sources of undue stress and identified six actions that the staff planned to take to mitigate that stress.
1/92	Commissioner Curtiss recommended that the staff submit a single annual report on the results of initial and requalification examinations.
3/92	SECY-92-100 requested Commission approval to implement the revised dynamic simulator requalification test grading procedure that would shift the focus from the individual operator to the operating crew and informed the Commission of the staff's intent to amend Part 55 to eliminate the requirement for every operator to pass an NRC requalification examination as a condition for license renewal.
6/92	The Commission approved the implementation of the crew-based dynamic simulator grading method for requalification examinations (at the facility licensee's option until the Examiner Standards are revised) and provided staff direction on the proposed rulemaking and inspection guidance.
12/92	The staff issued TI 2515/17, "Licensed Operator Requalification Program Evaluation," for Regional use in conducting pilot requalification program inspections at Salem, Hope Creek, Nine Mile 1, Turkey Point, Brunswick, LaSalle, Callaway, South Texas, and Diablo Canyon.

2/93	NUREG-1021, Revision 7, issued for implementation in 8/93. It incorporated the crew critical task grading method for simulator evaluations; individual operating evaluations are the responsibility of the facility licensee. The walk-through was reduced to 5 JPMs with no prescribed follow-up questions, and the written exam was reduced to one static scenario plus the section on administrative controls/procedural limits.
4/93	The Commission approves the proposed rulemaking (SECY-92-430) that would eliminate the requirement for every operator to pass an NRC-administered requalification examination as a condition for license renewal. It rejected the staff's proposal to continue periodic requalification examinations.
11/93	SECY-93-309 reports the results of the recentralization study to the Commission. It determined that inconsistency was primarily the result of individual differences between examiners and not a function of the organizational structure. Although it concluded that the examinations were valid, but it recommended four areas (examiner training, communications and interaction, regional oversight, and guidance on level of difficulty) and in which the staff could take action to improve consistency. The Commission directed the staff to update the status of actions in the annual report.
12/93	SECY-93-333 requests Commission approval of the final rule deleting the requirement for every licensed operator to pass an NRC-conducted requalification exam as a condition for license renewal. The Commission approved the rulemaking on 1/19/94 and the rule became effective on 3/11/94.
3/94	IP 71001, "Licensed Operator Requalification Program Evaluation," issued as part of the core inspection program.
6/94	NUREG-1021, Revision 7, Supplement 1, issued for implementation in 8/94 to bring the Standards into conformance with the 3/94 rule change and to recognize the shift from requalification oversight by examination to oversight by inspection.
8/94	Virginia Electric and Power Company (VEPCO) submitted a Cost Beneficial Licensing Action (CBLA) proposing to prepare the upcoming initial operator licensing examinations at its Surry and North Anna facilities.
11/94	The NRC staff denied VEPCO's proposal based on the need to maintain uniform conditions for licensing operators and concerns related to independence and objectivity.
3/95	SECY-95-075 described the staff's intent to revise the operator licensing program to allow greater participation by facility licensees and to eliminate contractor assistance in the operator licensing area. The changes were part of the staff's continuing effort to streamline the functions of the Federal government and to accommodate anticipated resource reductions. The staff briefed the Commission on the proposal in a public meeting on May 25, 1995.
4/95	The Commission did not object to the staff's proposal to initiate a transition process and directed the staff to carefully consider experience from pilot examinations.
6/95	The Commission responded to the staff's briefing with an SRM that directed the staff to maintain an in-house capability to administer license examinations.

8/95	Generic Letter (GL) 95-06 outlined the revised examination development process and solicited volunteers to participate in a 6-month pilot program (October 1, 1995, to April 5, 1996) to evaluate and refine the methodology.
11/95	Revision 1 of NUREGs-1122 and 1123, the PWR and BWR K/A catalogs, published for use in conjunction with Revision 8 of NUREG-1021. The revision resolved inconsistencies between the two catalogs and inconsistencies in content within the K/A catalogs. The revision also incorporated evolutionary changes in the operator licensing program.
4/96	Revision 2 of Regulatory Guide 1.149 issued endorsing, with exception, ANSI/ANS 3.5-1993, "Nuclear Power Plant Simulators for Use in Operator Training and Examination."
6/96	SECY-96-123 summarized the results of the pilot program and requested Commission approval to implement the new examination process on a voluntary basis while pursuing a rule change that would require power reactor facility licensees to draft the operator licensing examinations in accordance with NUREG-1021.
7/96	An SRM directed the staff to develop a detailed rulemaking plan and to address a number of issues related to the revised examination process (i.e., the potential impact on licensees; the degree of industry acceptance; the pros, cons, and vulnerabilities of industry-wide implementation; the examination results and trends; the industry comments on draft Revision 8 of NUREG-1021; and lessons learned from the pilot program).
9/96	SECY-96-206 provided additional information regarding the pilot program results and requested Commission approval of a rulemaking plan to amend Part 55 to require power reactor facility licenses to prepare the operator licensing examinations.
12/96	An SRM approved the rulemaking plan and the voluntary implementation of Interim Revision 8 of NUREG-1021 until the rulemaking was complete. The SRM also directed that the staff should draft at least one examination per region per calendar year to aid in maintaining proficiency, training new examiners, and checking quality.
1/97	Interim Revision 8 of NUREG-1021 was published for use and comment in conjunction with a proposed rule that would require power reactor facility licensees to prepare the initial operator licensing examinations.
1/97	GL 95-06, Supplement 1, informed power reactor licensees of the results of the pilot program and the Commission's decision to implement the revised examination process on a voluntary basis pending completion of a rulemaking that would require power reactor facility licensees to participate in the examination development process.
4/97	SECY-97-079 requested Commission approval to publish the proposed amendment to Part 55 that would require power reactor facility licensees to prepare the initial operator licensing examinations. The NRC would retain its authority to prepare the exams to maintain proficiency and in the event that it loses confidence in a facility licensee's ability to prepare acceptable examinations.

6/97	An SRM approved publication of the proposed rule change for a 75-day comment period subject to a number of comments and changes: the FRN should discuss the safety benefit of the proposed rulemaking and the importance of ensuring examination security and integrity; the staff should provide additional legal analysis regarding the applicability of the backfit rule; the FRN should specifically solicit comments regarding common aspects of the exam and the staff's conclusion that licensees could prepare the exams at lower cost; and the Congressional letters should be modified as directed.
8/97	Information Notice 97-67, "Failure to Satisfy the Requirements for Significant Manipulation of the Controls for Power Reactor Operator Licensing," alerted addressees that operator license applicants are required to perform at least five significant control manipulations on the facility for which a license is sought.
3/98	Revision 3 of Regulatory Guide 1.134 issued endorsing ANSI/ANS 3.4-1996, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants," with exceptions.
4/98	Information Notice 98-15, "Integrity of Operator Licensing Examinations," advised addressees of several instances of potential compromise of the integrity of operator licensing examinations.
6/98	Revision 2 of NUREGs-1122 and 1123, the PWR and BWR K/A catalogs, published to incorporate corrections to Revision 1 of the catalogs.
7/98	Information Notice 98-28, "Development of Systematic Sample Plan for Operator Licensing Examinations," alerted addressees to concerns that NRC found while conducting its licensed operator examination program.
8/98	The Committee to Review Generic Requirements (CRGR) questioned the staff's position that the backfit rule did not apply to the proposed Part 55 rule change. Its June 10 meeting minutes recommended making the provisions of the rule voluntary, as the industry had suggested.
10/98	Information Notice 98-37, "Eligibility of Operator License Applicants," issued to remind addressees that the eligibility requirements for applying for an operator license have not changed since 10 CFR Part 55 was amended in 1987.
11/98	SECY-98-266 requested Commission approval to publish a final amendment to Part 55 allowing, rather than requiring, power reactor facility licensees to prepare the initial operator licensing examinations and to publish a related revision to the enforcement policy.
2/99	An SRM approved the final rule amending Part 55 and the publication of final Revision 8 of NUREG-1021, subject to removal of the restriction on instructors preparing exam questions on topics that they taught. The Commission directed the staff to continue monitoring the exam results, particularly with regard to level of difficulty. The proposed changes to the enforcement policy were not approved.
4/99	The examination final rule was published in the Federal Register (64 FR 19868) and final Revision 8 of NUREG-1021 was issued.
9/99	SECY-99-225 sought approval of plan to amend Part 55 to address industry concerns regarding simulator maintenance and their use for significant control manipulations. The SRM of 10/5/99 raised no objections to the rulemaking plan.
10/99	The NRC launched the Operator Licensing Web Site.

10/99	The examination rule change and Revision 8 of NUREG-1021 became effective on 10/20.
2/00	NEI sponsored a national operator licensing workshop in Orlando, FL.
3/00	Draft Supplement 1 to Revision 8 of NUREG-1021 was issued for comment and voluntary trial use. The major changes included clarifications regarding the systematic and random selection of topics and questions for the written examination, the limits on question usage, and the documentation of NRC staff concerns related to draft examination quality.
4/00	SECY-00-083 requested approval to publish a proposed rule that would allow license applicants to fulfill a portion of the experience prerequisites by manipulating a plant-referenced simulator as an alternative to use of the actual plant. The proposed rule would also remove current requirements for certification of simulation facilities and routine submittal of simulator performance test reports to the NRC for review. An SRM approved the proposed rule (with clarifications to the Congressional letters) on 5/15/2000.
4/00	The NRC officially implemented the revised reactor oversight process (ROP), which replaced IP-71001 with IP 71111-Attachment 11 for the conduct of licensed operator requalification inspections.
5/00	Revision 3 of Regulatory Guide 1.8 was issued, endorsing, with additions, exception, and clarification, the 1993 version of ANSI/ANS 3.1, "American National Standard for Selection, Qualification, and Training of Personnel for Nuclear Power Plants."
6/00	An addendum to Revision 8, Supplement 1, of NUREG-1021 was issued for comment and voluntary trial use. The addendum made changes to conform with Revision 3 of RG 1.8 and extended the comment period on the draft supplement to 10/31/2000.
1/01	The NRC issued Appendix I of IMC-0609, the Operator Requalification Human Performance Significance Determination Process (SDP), to complement IP 71111.11.
1/01	Regulatory Issue Summary (RIS) 2001-01, "Eligibility of Operator License Applicants," reviewed and updated the status of this issue since Information Notice (IN) 98-37, "Eligibility of Operator License Applicants," was issued on October 1, 1998.
4/01	Final Supplement 1 to Revision 8 of NUREG-1021 was published.
6/01	Additional guidance clarifying the suppression or elimination of inappropriate K/A statements was published on the OL website.
7/01	SECY-01-125 requested approval to publish the final rule that allows license applicants to fulfill a portion of the experience prerequisites by manipulating a plant-referenced simulator as an alternative to use of the actual plant. The rule also removed current requirements for certification of simulation facilities and routine submittal of simulator performance test reports to the NRC for review. An SRM approved the rule (with changes to the FRN, press release, and Congressional letters) on 9/28/2001, and the rule became effective on 11/16/2001.
10/01	Revision 3 of Regulatory Guide 1.149 was issued, endorsing, with clarifications, the 1998 version of ANSI/ANS 3.5.

3/02	Appendix I of IMC-0609, the Operator Requalification Human Performance Significance Determination Process (SDP), was revised to incorporate lessons learned from the IP-2 and Cooper enforcement issues.
6/02	Additional guidance clarifying the conduct of peer checks was published on the OL website.
8/02	IP 71111.11 was revised to implement the simulator rule change (10 CFR 55.46).
1/03	Draft Revision 9 of NUREG-1021 was issued for comment and voluntary trial use through 12/31/2003. The major changes: (1) improve efficiency by reducing the length of the RO written examination; (2) clarify and simplify the design of the SRO written examination; (3) better risk-inform both written examinations; (4) better balance the administrative and systems portions of the walk-through operating test; (5) clarify the grading criteria for the simulator operating test; and (6) incorporate guidance regarding the suppression of inappropriate knowledge and ability (K/A) statements and the conduct of peer checks that was previously promulgated on the NRC's operator licensing web page.
2/03	NEI sponsored a national operator licensing workshop in Tampa, FL.
6/03	RIS 2003-10 was issued to clarify the NRC staff's expectations regarding the frequency of licensed operator requalification written examinations based on lessons learned from the Dresden case.